EPI-LOG

Communicable Disease and Epidemiology News
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Laurie K. Stewart, MS, Editor

Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.
Epidemiology, Prevention Division
Wells Fargo Center
999 Third Avenue, Suite 900
Seattle, WA 98104-4039

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Best Bites: West Nile Virus Surveillance in King County

Since it first emerged in the U.S. with an outbreak in NYC in 1999, the West Nile virus (WNV) has expanded to at least 27 states and to the other Washington (D.C.). It would not be surprising if WNV arrived on the West Coast this season. WNV is a flavivirus, (as are the Japanese encephalitis and St. Louis encephalitis (SLE) viruses. WNV can affect humans, horses, birds, and other vertebrates. The clinical presentation cannot be reliably distinguished from other viral encephalitides. Most WNV cases have occurred in the late summer and fall.

The incubation period is usually 3 to 15 days. The ratio of infected to symptomatic cases is 150:1 and most infections are mild, with symptoms including fever, headache, and body aches, skin rash and swollen lymph glands. Severe infections cause meningoencephalitis, with a range of neurologic and systemic manifestations, including headache, high fever, neck stiffness, stupor, disorientation, cranial nerve abnormalities, nausea, vomiting, coma, tremors, convulsions, muscle weakness (present in 40% of 1999 New York cases), paralysis (present in 20% of 1999 New York cases with electromyographic findings consistent with an axonal neuropathy) and, rarely, death. The presence of neuromuscular weakness in a patient with meningoencephalitis is suggestive of WNV infection. Case-fatality rates range from 3% to 15% and are highest in the elderly. Long-term sequelae are a significant problem among hospitalized cases.

WNV cases and outbreaks have been described in Africa, Europe, the Middle East, west and central Asia, Oceania (sub-type Kunjin), and, as of August 1999, North America. In 1999, 62 cases of severe disease, including 7 deaths, occurred in New York City. In 2001, there were 149 confirmed human cases of West Nile virus illness in the U.S., including 18 fatalities. WNV has been documented in Alabama, Arkansas, Connecticut, Delaware, the District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, Tennessee, Virginia and Wisconsin.

WNV is transmitted by the bite of one of a number of mosquito species (primarily *Culex* species, which are present in Washington) that are infected with the virus after feeding on infected birds. Ticks infected with WNV have been found in Asia and Africa, although their role in the transmission and maintenance of the virus is uncertain. WNV is not transmitted person-to-person, or to humans directly from dead or living animals other than mosquitoes.

There is no vaccine or specific therapy for WNV. In severe cases, intensive supportive therapy is indicated, i.e., hospitalization, intravenous (IV) fluids, airway management, respiratory support, prevention of secondary infections (pneumonia, urinary tract, etc.), and good nursing care.

Human cases of Western equine encephalitis and SLE virus have occurred in Washington in the past. Most cases occurred in eastern Washington locations; the last reported case being a Chelan County resident in 1982. **Viral encephalitis, including WNV infection, is reportable by health care providers within 3 working days.** A definitive diagnosis is not required for reporting and we encourage reporting once the diagnosis is suspected or presumed.

WNV testing will be done at no charge on specimens that meet the following diagnostic criteria:

Any adult or pediatric patient with the following clinical syndrome that characterized most of the cases of encephalitis in 1999:

1. Fever equal to or greater than 38°C or 100° F,

AND

2. Altered mental status (altered level of consciousness, lethargy, or change in personality),

AND

3. CSF pleocytosis with predominant lymphocytes and moderately elevated protein,

WITH or WITHOUT

4. Muscle weakness (especially flaccid paralysis) confirmed by neurologic exam or EMG.

OR

Any adult or pediatric patient admitted to the hospital with a presumptive diagnosis of viral

encephalitis.

OR

Any adult or pediatric patient admitted with presumed Guillain-Barre Syndrome or acute flaccid paralysis.

Suspected cases of WNV infection should also be evaluated for possible botulism or Guillain-Barre syndrome if neuromuscular weakness is present.

Available diagnostic tests include IgM testing on sera and CSF and PCR on CSF. The PCR testing is not currently sufficient for a definitive diagnosis. **The following procedure is recommended for patient specimen testing for West Nile virus (WNV) encephalitis:**

- Call the Communicable Disease Control, Epidemiology and Immunization Section, for assistance with WNV testing at 206-296-4774 during business hours; other times, leave a message on the 24-hour disease report line, 206-296-4782.
- Within 14 days of onset, collect at least 3 ml serum (not whole blood), and at least 1 cc CSF
- Public Health will facilitate completion of required CDC forms and transport of specimens to the WA State Public Health Laboratory

In cases that have a low probability for WNV (e.g., only one or two of the above criteria), consider preliminary screening by testing a blood specimen for St. Louis encephalitis (SLE) through your clinical laboratory. Since SLE and WNV are closely related viruses, a WNV case will react positively when tested for SLE. Public Health should be notified of any IgM-positive SLE tests so that follow-up testing for WNV can be performed.

Test Interpretation

IgM antibody is present in most cases by day 8 of illness. By 3 weeks after onset, almost all cases will have IgG antibody. In general, convalescent specimens should be drawn about 10-14 days after acute phase specimens.

A negative IgM test result on a specimen obtained less than 8 days after onset of illness will be reported as "inconclusive." A second (convalescent) specimen, obtained at least 2 weeks after the date of the first specimen, should be obtained to make a final determination.

A positive IgM test result on an acute specimen will be reported as "suspect positive" and sent to CDC for confirmation by serum neutralization testing. Serologic cross-reactions may occur in persons with a history of flaviviral encephalitides, or of receiving yellow fever or Japanese encephalitis vaccines.

Return of the Malicious Melons: *Salmonella* Poona Outbreak Associated with Imported Cantaloupes

An outbreak of *Salmonella* Poona has sickened three-dozen people across the country, including 10 in Washington State and 3 in King County. Susie brand cantaloupe, imported from Mexico, was implicated as the source of the infections, and the malicious melons have been voluntarily recalled. This is the third consecutive year that *salmonella* outbreaks associated with imported cantaloupes have occurred.

This outbreak serves as a reminder to thoroughly wash the skins of fruits and vegetables (especially those that are eaten raw), before slicing and consuming them, and to refrigerate them promptly after slicing. The FDA has additional information about the Susie cantaloupe recall on their website: http://www.fda.gov/oc/po/firmrecalls/kunik05_02.html).

CDC Satellite Course: The Immunization Encounter: Critical Issues

On **Thursday, June 27th, 9:00 am– 11:30 am,** the CDC's National Immunization Program is providing a course for immunization clinic managers and staff who administer vaccines (RNs, MAs, NPs, PAs, etc.).

The program will be held at the Region X Public Health Service office in Seattle. For more information, contact Tiffany Acayan at 206-205-5812.

Disease Reporting

AIDS ..... (206) 296-4645
Communicable Disease ..... (206) 296-4774
STDs ..... (206) 731-3954
Tuberculosis ..... (206) 731-4579
24-hr Report Line ..... (206) 296-4782

Hotlines:

CD Hotline ..... (206) 296-4949
HIV/STD Hotline ..... (206) 205-STDS

Past issues of the *Epi-log* can be found at:
www.metrokc.gov/health/providers

Reported Cases of Selected Diseases, Seattle & King County 2002

	Cases Reported in April		Cases Reported through April	
	2002	2001	2002	2001
AIDS	16	31	106	130
Campylobacteriosis	23	25	84	90
Cryptosporidiosis	0	1	4	6
Chlamydial infections	323	347	1374	1335
Enterohemorrhagic *E. coli* (non-O157)	0	0	0	3
***E. coli* O157: H7**	0	0	3	3
Giardiasis	23	9	70	45
Gonorrhea	107	112	472	509
***Haemophilus influenzae* (cases <6 years of age)**	0	0	0	0
Hepatitis A	3	0	18	5
Hepatitis B (acute)	1	5	7	13
Hepatitis B (chronic)	51	42	154	171
Hepatitis C (acute)	1	2	6	5
Hepatitis C (chronic, confirmed/probable)	131	105	528	463
Hepatitis C (chronic, possible)	40	47	175	171
Herpes, genital	57	62	215	257
Measles	0	0	0	12
Meningococcal Disease	1	0	10	4
Mumps	0	0	0	0
Pertussis	5	0	26	2
Rubella	0	0	0	0
Rubella, congenital	0	0	0	0
Salmonellosis	22	11	50	66
Shigellosis	4	3	17	20
Syphilis	0	2	13	21
Syphilis, congenital	0	0	0	0
Syphilis, late	0	4	9	11
Tuberculosis	13	17	33	37

Alternate formats available upon request.